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Memorandum

Prepared for: File
Project Title: Florence Copper
Project No.: 149050

Subject: Florence Copper Project, Temporary APP and UIC Permits, Ambient Events 7 and MW-01s 2 and 3
Date: May 16, 2018
To: Ian Ream
From: Barb Sylvester

Groundwater sampling at the Florence Copper Project site took place January 9 through January 11 and January 15 and 25, 2018. Twelve (12) Point-of-Compliance (POC) and Supplemental wells were sampled as part of the ambient monitoring program for the Temporary APP and UIC permits. Wells MW-01-LBF, MW-01-O, and M61-LBF were sampled twice during the month, fourteen days apart. Fifteen total samples were collected, including one duplicate sample. Low-flow pumps were installed in wells MW-01-LBF and MW-01-O. The low-flow pump was removed from well M61-LBF and an electric pump installed. Table 1 summarizes the sampling activities.

Ambient samples were to be analyzed for metals, inorganics, organics, and radionuclides (Table 2). Samples for metal analysis were filtered in the field.

Table 1. Summary of January 2018 Ambient Event

Date	Sample Identification	Pump Style	Analyses
January 9, 2018	M52-UBF	Low-Flow	Level II
	M54-LBF	Low-Flow	Level II
	M54-O	Low-Flow	Level II
	M58-O	Low-Flow	Level II
January 10, 2018	M57-O	Low-Flow	Level II
	M59-O	Low-Flow	Level II
	M61-LFB M63.0 (Duplicate)	Electric	Level II

Table 1. Summary of January 2018 Ambient Event			
Date	Sample Identification	Pump Style	Analyses
January 11, 2018	MW-01-LBF	Low-Flow	Level II
January 11, 2018	MW-01-O	Low-Flow	Level II
January 15, 2018	M55-UBF	Low-Flow	Level II
	M56-LBF	Low-Flow	Level II
	M60-O	Low-Flow	Level II
January 25, 2018	M61-LFB	Electric	Level II
	MW-01-LBF	Low-Flow	Level II
	MW-01-O	Low-Flow	Level II

Table 2. Analytical Parameters		
Analysis	Method	Preservative
Inorganic Common Ions		
pH (lab)	SM 4500H+	None
Electroconductivity (EC) (lab)	SM 2510B	None
Bicarbonate Alkalinity	SM 2320B	None
Carbonate Alkalinity	SM 2320B	None
Hydroxide Alkalinity	SM 2320B	None
Total Alkalinity	SM 2320B	None
Chloride	EPA 300.0	None
Fluoride (Level I)	EPA 300.0	None
Nitrate as N	EPA 300.0	None
Nitrite as N	EPA 300.0	None
Sulfate (Level I)	EPA 300.0	None
Total Dissolved Solids (Level I)	SM 2540C	None
Cation/Anion Balance	Calculation	-
Cyanide	EPA 335.4	NaOH
Formation-Related Radiochemicals		
Gross Alpha	600/00-02	None
Gross Beta	900.0	None
Radium 226	903/GammaRay HPGE	None
Radium 228	904/GammaRay HPGE	None
Total Uranium Isotopes (if G. Alpha >12.0)	ASTM 6239	None
Radon 222	7500-Rn	None (Voas)
Total Uranium (unfiltered total as mg/L)	EPA 200.8	HNO3

Table 2. Analytical Parameters		
Analysis	Method	Preservative
Process-Related Organics		
Extractable Fuel Hydrocarbons (Diesel Range Organics)	EPA 8015D	None
Benzene	EPA 8260B	HCl Voas
Ethylbenzene	EPA 8260B	HCl Voas
Toluene	EPA 8260B	HCl Voas
Total Xylene	EPA 8260B	HCl Voas
Carbon Disulfide	EPA 8260B	HCl Voas
Napthalene	EPA 8260B	HCl Voas
Octane	EPA 8260B	HCl Voas
Trace Metals and Cations (Filtered-Dissolved)		
Aluminum	EPA 200.8	HNO3
Antimony	EPA 200.8	HNO3
Arsenic	EPA 200.8	HNO3
Barium	EPA 200.8	HNO3
Beryllium	EPA 200.8	HNO3
Calcium	EPA 200.7	HNO3
Cadmium	EPA 200.8	HNO3
Chromium	EPA 200.8	HNO3
Cobalt	EPA 200.8	HNO3
Copper	EPA 200.8	HNO3
Iron	EPA 200.7	HNO3
Lead	EPA 200.8	HNO3
Magnesium (Level I)	EPA 200.7	HNO3
Manganese	EPA 200.8	HNO3
Mercury	EPA 245.1	HNO3
Nickel	EPA 200.8	HNO3
Potassium	EPA 200.7	HNO3
Selenium	EPA 200.8	HNO3
Sodium	EPA 200.7	HNO3
Thallium	EPA 200.8	HNO3
Zinc	EPA 200.8	HNO3

Observations/Problems

1. Low-flow pumps were installed in wells MW-01-LBF and MW-01-0.
2. The low-flow pump was removed from well M61-LBF and an electric pump installed to observe any changes to water quality with a traditional three well-volume purge.
3. Wells MW-01-LBF, MW-01-0, and M61-LBF were sampled twice during the month, fourteen days apart.
4. During the January 25 sampling event, M61-LBF was purged for three casing volumes, but not three borehole volumes. This is not expected to affect sample quality.
5. Turbidity measurements above 5 NTUs were observed in M56-LBF.

Table 3. Summary of Water Levels						
Sample Event:	Ambient Event 7, MW-01s 2&3				Measured By:	M. Orcutt
Well ID	Sample Date	Depth to Water (feet bls)	Description of Measuring Point	Elevation of Measuring Point (feet amsl)	Water Level Elevation (feet amsl)	Comments
M52-UBF	1/9/2018	229.88	TOC	1485.04	1255.16	
M54-LBF	1/9/2018	228.66	TOC	1481.89	1253.23	
M54-O	1/9/2018	226.12	TOC	1482.40	1256.28	
M55-UBF	1/15/2018	224.71	TOC	1479.21	1254.50	
M56-LBF	1/15/2018	224.85	TOC	1478.69	1253.84	
M57-O	1/10/2018	222.92	TOC	1478.75	1255.83	
M58-O	1/9/2018	224.80	TOC	1481.16	1256.36	
M59-O	1/10/2018	223.80	TOC	1480.26	1256.46	
M60-O	1/15/2018	223.08	TOC	1477.45	1254.37	
M61-LBF	1/10/2018	223.32	TOC	1480.80	1257.48	
M61-LBF	1/25/2018	NM	TOC	NM	NA	
MW-01-LBF	1/11/2018	225.63	TOC	NM	NA	
MW-01-LBF	1/25/2018	225.45	TOC	NM	NA	
MW-01-O	1/11/2018	223.34	TOC	NM	NA	
MW-01-O	1/25/2018	224.80	TOC	NM	NA	

amsl = Above Mean Sea Level

TOC = Top of Casing

TOM = Top of Monument

NM = Not Measured

Table 4. Summary of Field Parameters						
Sample Event:	Ambient Event 7, MW-01s 2&3		Measured By:	M. Orcutt		
Well ID	Sample Date	Temperature (°C)	pH	Conductivity (µmhos/cm)	Turbidity (NTU)	Comments
M52-UBF	1/9/2018	22.5	7.35	1,434	1.54	
M54-LBF	1/9/2018	22.3	7.57	1,511	0.97	
M54-O	1/9/2018	21.8	8.16	768	0.40	
M55-UBF	1/15/2018	22.3	7.22	1,480	4.60	
M56-LBF	1/15/2018	24.4	7.37	1,402	8.21	
M57-O	1/10/2018	21.4	7.83	842	4.09	
M58-O	1/9/2018	22.3	7.60	1,505	4.59	
M59-O	1/10/2018	21.1	7.98	860	0.90	
M60-O	1/15/2018	21.0	7.67	1023	4.92	
M61-LBF	1/11/2018	26.8	7.87	767	2.72	
M61-LBF	1/25/2018	27.1	7.93	745	2.68	
MW-01-LBF	1/11/2018	22.2	7.36	1,489	3.20	
MW-01-LBF	1/25/2018	22.8	7.35	1,471	2.62	
MW-01-O	1/11/2018	21.9	7.63	1,291	1.94	
MW-01-O	1/25/2018	21.5	7.60	1,418	2.37	

°C = degrees Celsius

°F = degrees Fahrenheit

µmhos/cm = Micromhos per Centimeter

NTU = Nephlometric Tubidity Units

SITE VISITATION

JOB NAME: Florence Copper **JOB NUMBER:** 150342.301

PERSONNEL: M. Orcutt **DATE:** 1-9-2018

COMMENTS: Windy, Warm, Partly Cldy

0740 On site, signed in at front office and spoke with IAN.
Brought 1 new box of QED filters and left in sample room.
Picked up QED equipment and Nitrogen.
Mob to wells to warm up BC's and Q meter for APP Calibration

0900 Sampled MS4-0
1012 Sampled MS4-UBF
1100 Short lunch and return.
Mob to MS8 - No Key - return to office.
Delay with road blocked.

1250 Sampled MS8-0
Mob to MS2-UBF

1407 Sampled MS2-UBF
1450 Mob back to shop. Drop off QED equipment and hand over samples to Ian @ 1500.
Radon ZZZ, Rad Chem to Rad Safety

1510 off site.

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SITE VISITATION

JOB NAME: Florence Copper JOB NUMBER: 150342.301

PERSONNEL: M. Orcutt DATE: 1-10-2018

COMMENTS: Misty Rain, Cool

0730 On site, checked in with Greg, Grab Turner cooler and QED equipment, Mob to wells to warm up Bc's WQ meters for APP Calibrations.

0837 Sampled MS9-0
Checked out MW-01 Wells - Access OK from North.
Spoke with Ian on Intake Changes
MW-01-0 No Change
MW-01-LBF -170' drop Tube (300.5') Total length to set @ 400' +/- pump + drop tube lengths

1000 Matt on site to set pumps.
Checked QED supply and mob to MW-01's
Set QED's ~~per~~ in both wells.
Returned reels to storage
Short lunch and return to MS7-0

1342 Sampled MS7-0
1442 Mob back to Shop
Returned QED and gave samples to Ian,
No Sign in/out

1510 off Site to Rad Safety

SITE VISITATION

JOB NAME: Florence Copper **JOB NUMBER:** 150342

PERSONNEL: M. Ocaña **DATE:** 1-11-2018

COMMENTS:

0740 On site, checked in with Ian and picked up QED equipment.
MG1 Generator out of fuel, Mike to fill and restart.
MG1 started 1-10-18 @ ? (By H&A)
Static WL GPM ~ 8 after large drawdown.

0800 Mob to MW-01 wells to warm up BC's WQ meters for APP calibration.

0920 Sampled MW-01-0
1100 Sampled MW-01-LBF
1150 Short lunch

1255 Sampled MG1-LBF w/ Dup MG3.0

1400 off site to Rad Safety

SITE VISITATION

JOB NAME: Florence Copper **JOB NUMBER:** 150342.301

PERSONNEL: M. Orait **DATE:** 1-15-2018

COMMENTS:

0800 On site, spoke with Ian and loaded up QED equipment and coolers. Mob to wells and warmed up BC's WG motors for APP Calibration

0918 Sampled M60-O

1028 Sampled M56-LBF

1145 Sampled M55-UBF

1240 Mob back to unload Nitrogen, QED equip, and hand over samples to Ian.

1310 off site, to Rad Safety

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SITE VISITATION

JOB NAME: Florence Copper **JOB NUMBER:** 150342

PERSONNEL: M. Orcutt **DATE:** 1-25-2018

COMMENTS: Clear, cool, Breezy AM. warm P.M.

0800 On site, Picked up QED equipment Picked up Nitrogen (brought 150cf xtra). Mob to wells to warm up BC's W/Q meters for APP Calibration

0932 Sampled MW-01-O

1112 Sampled MW-01-LBF

1202 Short lunch and return to pumping well M61-LBF.

1310 Sampled M61-LBF

1350 Mob back to unload Nitrogen/QED Turned Samples over to Ian for Turner Labs

1415 off Site to Rad Safety,

Ed 1/25/18

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M52-UBF

SAMPLED BY: M. Orcutt

DATE: 1/9/~~2017~~ 2018

WELL INFORMATION

TD Casing: 275 feet

Static Depth to Water: 229.88 feet

System Purge before Params 2.6 liters

Time Purge Start: 1348 hours

Time Sample Start: 1407 hours

Time Purged: 19 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 237.5'
1356	22.5	7.36	1433	5.30	2.00	0.37	3.0	0.00	Clear, No ODORS
1359	22.5	7.35	1433	5.14	1.45	0.33	4.0	0.00	
1402	22.5	7.35	1433	5.13	1.61	0.33	5.0	↓	
1405	22.5	7.35	1434	5.14	1.54	0.33	6.0	↓	
									Low flow for VOC's

Sample ID: M52-UBF Sample Time, 1407 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M54-LBF

SAMPLED BY: M. Orcutt

DATE: 1/9/~~2017~~ 2018

WELL INFORMATION

TD Casing:	630	feet	Time Purge Start:	0948	hours
Static Depth to Water:	228.66	feet	Time Sample Start:	1012	hours
System Purge before Params	3.9	liters	Time Purged:	24	minutes

Time	Temperature (°C)	pH	EC (umhos/cm)	DO (mg/L)	Turbidity (NTU)	Pump Rate (L/min)	Purge Volume (L)	Pulldown DTW (feet)	Comments
1001	+/- 3%	+/- 0.1	+/- 3%	10% or <.5	10% or <5	<0.5L/min		<0.5 ft	QED Bladder Pump Intake 470'
~~0955~~	22.4	7.75	1513	3.05	2.10	0.30	4.0	0.00	Clear, NO ODORS
1004	22.3	7.57	1512	3.83	1.83	0.33	5.0	0.00	
1007	22.3	7.58	1511	3.71	0.96	0.33	6.0	↓	
1010	22.3	7.57	1511	3.60	0.97	0.33	7.0		
									Low flow for VOCs

Sample ID: M54-LBF Sample Time, 1012 Duplicate (ID = N/A, Time N/A.) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M54-O

SAMPLED BY: M. Orcutt

DATE: 11/9/2017 2018

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: 226.12 feet

System Purge before Params 9.2 liters

Time Purge Start: 0820 hours

Time Sample Start: 0900 hours

Time Purged: 40 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 1000'
0849	21.8	8.11	764	1.82	1.42	0.32	9.5	0.00	Clear, No odors
0852	21.8	8.15	767	1.68	0.78	0.33	10.5	↓	
0855	21.9	8.16	768	1.56	0.50	0.33	11.5		
0858	21.8	8.16	768	1.49	0.40	0.33	12.5		
									Low flow for VOC's
									2,4,6,8,

Sample ID: M54-O Sample Time, 0900 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M55-UBF

SAMPLED BY: M. Orcutt

DATE: 1/15/2017 ~~2018~~

WELL INFORMATION

TD Casing:	260	feet	Time Purge Start:	1125	hours
Static Depth to Water:	224.71	feet	Time Sample Start:	1145	hours
System Purge before Params	2.8	liters	Time Purged:	20	minutes

Time	Temperature (°C)	pH	EC (umhos/cm)	DO (mg/L)	Turbidity (NTU)	Pump Rate (L/min)	Purge Volume (L)	Pulldown DTW (feet)	Comments
	+/- 3%	+/- 0.1	+/- 3%	10% or <.5	10% or <5	<0.5L/min		<0.5 ft	QED Bladder Pump Intake 250'
~~10~~ 1135	22.3	7.22	1479	4.28	10.5	0.30	3.0	0.00	Clear, NO ODORS
1138	22.3	7.24	1480	5.20	7.29	0.33	4.0		
1141	22.3	7.24	1479	5.28	5.58	↓	5.0	↓	
1144	22.3	7.22	1480	5.50	4.60	↓	6.0	↓	
									Low flow for UCC

Sample ID: M55-UBF Sample Time, 1145 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M56-LBF

SAMPLED BY: M. Orcutt

DATE: 1/15/~~2017~~ 2018

WELL INFORMATION

TD Casing:	340	feet	Time Purge Start:	10:06 hours
Static Depth to Water:	224.85	feet	Time Sample Start:	1028 hours
System Purge before Params	2.4	liters	Time Purged:	22 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 330'
1015	21.4	7.25	1385	1.94	7.01	0.27	2.5	0.15	Clear, NO odors
1019	21.4	7.35	1400	2.09	10.02	0.25	3.5	0.15	
1022	21.4	7.37	1404	2.18	9.98	0.33	4.5	0.15	
1025	21.4	7.37	1402	2.30	8.21	0.33	5.5	0.15	
									Low flow for VOCs

Sample ID: M56-LFB Sample Time, 1028 Duplicate (ID = N/A Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M57-O

SAMPLED BY: M. Orcutt

DATE: 1/10/~~2019~~ 2018

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: 222.92 feet

System Purge before Params 8.7 liters

Time Purge Start: 1302 hours

Time Sample Start: 1342 hours

Time Purged: 40 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 950'
1330	21.2	7.74	850	1.08	5.09	0.32	9.0	0.00	clear, NO odors
1333	21.4	7.77	845	1.03	4.75	0.33	10.0	0.00	
1336	21.4	7.80	842	1.04	4.70	0.33	11.0	0.00	
1339	21.6	7.83	842	1.02	4.09	0.33	12.0		
									Low flow for VOC's
									2, 4, 6

Sample ID: M57-O Sample Time, 1342 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M58-O

SAMPLED BY: M. Orcutt

DATE: 1/9/~~2017~~ 2018

WELL INFORMATION

TD Casing:	1,200	feet	Time Purge Start:	12:10	hours
Static Depth to Water:	224.80	feet	Time Sample Start:	1250	hours
System Purge before Params	8.7	liters	Time Purged:	40	minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 950'
1238	22.2	7.52	1463	2.01	10.4	0.32	9.0	0.00	LT. Cldy, no odor
1241	22.2	7.55	1459	1.82	7.06	0.33	10.0	↓	
1244	22.2	7.57	1459	1.77	4.90	0.33	11.0		
1247	22.3	7.66	1505	1.73	4.59	0.33	12.0	↓	
									Low flow for VOC's
									2, 4, 6, 8

Sample ID: M58-O Sample Time, 1250 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M59-O

SAMPLED BY: M. Orcutt

DATE: 11/~~2017~~ 2018

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: 223.80 feet

System Purge before Params 8.7 liters

Time Purge Start: 0800 hours

Time Sample Start: 0837 hours

Time Purged: 37 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 950'
0826	21.1	7.87	835	1.23	1.27		9.0	0.20	Clear No odors
0829	20.9	7.94	850	1.59	1.32	0.33	10.0	0.20	
0832	21.1	7.96	854	1.60	1.40	0.33	11.0	0.25	
0835	21.1	7.98	860	1.23	0.90	0.33	12.0	0.25	
									Low flow for VOC's
									2, 4, 6, 9

Sample ID: M59-O Sample Time, 0837 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M60-O

SAMPLED BY: M. Orcutt

DATE: 1/15/~~2017~~ 2018

WELL INFORMATION

TD Casing:	1,200	feet	Time Purge Start:	0840	hours
Static Depth to Water:	223.08	feet	Time Sample Start:	0918	hours
System Purge before Params	8.7	liters	Time Purged:	38	minutes

Time	Temperature (°C)	pH	EC (umhos/cm)	DO (mg/L)	Turbidity (NTU)	Pump Rate (L/min)	Purge Volume (L)	Pulldown DTW (feet)	Comments
	+/- 3%	+/- 0.1	+/- 3%	10% or <.5	10% or <5	<0.5L/min		<0.5 ft	QED Bladder Pump Intake 950'
0907	21.0	7.58	1095	2.20	10.0	0.30	9.0	0.00	clear, No Odors
0910	21.1	7.63	1046	1.94	7.99	0.33	10.0	0.00	
0913	20.4	7.65	1024	1.75	6.00	0.33	11.0	↓	
0916	21.0	7.67	1023	1.60	4.92	0.33	12.0		
									Low flow for VOCs
									2,4,D,S

Sample ID: M60-O Sample Time, 0918 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M61-LBF

SAMPLED BY: M. Orcutt

DATE: 1-10-2018 / 1-11 /2018

WELL INFORMATION

TD Casing:	635	feet	Static Depth to Water:	223.32 TOP Port	feet
Screened Interval:	435-635	feet	Feet Water in Casing:	412	feet
Discharge Rate:	8.0	gpm (est)	Casing Capacity:	1.02	gal/ft
Estimated Purge Time:	@ 265	minutes	3X Sand Pack Volume	864	gallons
Purge Start:	1-10-18 @ 1230	hours	Purge Volume:	2124	gallons
Purge End:	1-11-18 @ 1255	hours	Water Level at Sampling:	427.80	feet
Total Purge Time:	1465	minutes			

Flow start 5600 gallons pump @ 440

Time	Temperature (°C)	pH	EC (umhos/cm)	DO (mg/L)	Turbidity (NTU)	Pump Rate (gpm)	Purged Volume (gallons)	Comments
~~1240~~ @	10%	10%	10%			8.0		FULL PUMP
1240	26.7	7.73	778	2.71	4.32			clear, NO ODOR
1245	27.0	7.85	776	1.88	2.03			
1250	27.1	7.86	774	1.93	2.69			
1255	26.8	7.87	767	2.84	2.72		N 11,720	After Sampling
								Assume 8gpm 24 hrs.

Sample ID: M61-LBF Sample Time, 1255 Duplicate (ID = M6310, Time 1310) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M61-LBF

SAMPLED BY: M. Orcutt

DATE: 1-25-/2018

WELL INFORMATION

TD Casing:	635	feet	Static Depth to Water:	@ 232 –	feet
Screened Interval:	435-635	feet	Feet Water in Casing:	@ 403	feet
Discharge Rate:	5.5	gpm (est)	Casing Capacity:	1.02	gal/ft
Estimated Purge Time:	377	minutes	3X Sand Pack Volume	864	gallons
Purge Start:	1-25-18 0815	hours	Purge Volume:	~ 2073	gallons
Purge End:	1-25-18 1310	hours	Water Level at Sampling:	~ 400	feet
Total Purge Time:	295	minutes			

Time	Temperature (°C)	pH	EC (umhos/cm)	DO (mg/L)	Turbidity (NTU)	Pump Rate (gpm)	Purged Volume (gallons)	Comments
	10%	10%	10%					FULL PUMP
1255	26.9	7.77	756	3.04	3.32	5.5		Clear, NO ODORS
1300	27.1	7.89	748	3.33	3.16	↓		
1305	27.2	8.00	741	~~3.09~~ 3.32	3.08			
1310	27.1	7.93	745	2.26	2.68	↓	~1622	After Sampling
								Low flow for VOC's
								* Purge exceeds 3 casing volumes but below 3 borehole volumes

Sample ID: M61-LBF Sample Time, 1310 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: MW-01-LBF

SAMPLED BY: M. Orcutt

DATE: 1/11/~~2017~~ 2018

WELL INFORMATION

TD Casing: 630 feet

Static Depth to Water: 225.63 feet

System Purge before Params 5.0 liters

New Pump 1-10-2018

Time Purge Start: 1016 hours

Time Sample Start: 1100 hours

Time Purged: 44 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 580'
1035	22.0	7.36	1489	4.76	4.85	0.26	5.0	0.00	Clear, no odors
1039	22.1	7.36	1485	4.71	4.85	0.33	6.0	0.00	
1041	22.1	7.42	1486	4.50	5.02	0.33	7.0	0.00	
1045	22.3	7.36	1487	4.92	3.47	0.25	8.0	0.00	
1049	22.2	7.36	1489	4.85	3.68	0.25	9.0	0.00	
1053	22.1	7.36	1490	4.69	3.42	0.25	10.0	0.00	
1056	22.2	7.36	1489	4.70	3.36	0.33	11.0	0.00	
1059	22.2	7.36	1489	4.65	3.20	0.33	12.0	0.00	
									Low flow for VOC's
									Xtra purge per Ian on new well
					N/A	N/A			2.4

Sample ID: MW-01-LBF Sample Time, 1100 Duplicate (ID = ~~MW61~~ 1463.0 Time ~~11:11~~) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: MW-01-LBF

SAMPLED BY: M. Orcutt

DATE: 1/12~~/2017~~ 2018

WELL INFORMATION

TD Casing: 630 feet

Static Depth to Water: 225.45 feet

System Purge before Params 5.0 liters

Time Purge Start: 1028 hours

Time Sample Start: 1117 hours

Time Purged: 44 minutes

Time	Temperature (°C)	pH	EC (umhos/cm)	DO (mg/L)	Turbidity (NTU)	Pump Rate (L/min)	Purge Volume (L)	Pulldown DTW (feet)	Comments
	+/- 3%	+/- 0.1	+/- 3%	10% or <.5	10% or <5	<0.5L/min		<0.5 ft	QED Bladder Pump Intake 580'
1046	22.6	7.19	1470	3.99	5.37	0.27	5.0	0.00	Clear, NO ODORS
1050	22.7	7.38	1468	4.00	3.83	0.25	6.0	0.00	
1054	22.7	7.38	1470	3.94	3.27	0.25	7.0	0.00	
1058	22.7	7.37	1470	3.80	2.36	0.25	8.0	0.00	
1102	22.7	7.36	1469	3.86	2.50	0.25	9.0	0.00	
1106	22.7	7.36	1470	3.92	2.03	0.25	10.0	0.02	
1110	22.8	7.35	1471	3.86	2.62	0.25	11.0	0.03	
									Low flow for VOCs

Sample ID: MW-01-LBF Sample Time, 1112 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: MW-01-O

SAMPLED BY: M. Orcutt

DATE: 1/11/~~2017~~ 2018

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: 223.34 feet

System Purge before Params 9.2 liters

New pump 1-10-2018

Time Purge Start: 0822 hours

Time Sample Start: 0920 hours

Time Purged: 58 minutes

Time	Temperature (°C)	pH	EC (umhos/cm)	DO (mg/L)	Turbidity (NTU)	Pump Rate (L/min)	Purge Volume (L)	Pulldown DTW (feet)	Comments
	+/- 3%	+/- 0.1	+/- 3%	10% or <.5	10% or <5	<0.5L/min		<0.5 ft	QED Bladder Pump Intake 1000'
0857	21.8	7.59	1293	3.78	2.43	0.27	9.5	0.06	Clear, no odors
0900	21.8	7.60	1294	3.42	2.43	0.33	10.5	0.06	
0903	21.8	7.60	1292	3.07	2.22	0.33	11.5	0.07	
0906	21.8	7.61	1290	2.90	2.00	0.33	12.5	0.07	
0909	22.0	7.61	1292	2.75	2.01	0.33	13.5	0.08	
0912	21.8	7.62	1292	2.66	1.78	0.33	14.5	0.09	
0915	21.9	7.62	1293	2.56	1.81	0.33	15.5	0.09	
0918	21.9	7.63	1291	2.48	1.94	0.33	16.5	0.09	
									Low flow for VOC's
									Per Ian, over pump some on new wells
									First 2 Liters dirty
									5L - clearing
									2, 4, 6, 8

Sample ID: MW-01-O Sample Time, 0920 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: MW-01-O

SAMPLED BY: M. Orcutt

DATE: 1/25/~~2017~~ 2018

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: 224.80 feet Initial Tag @ 224.90

System Purge before Params 9.2 liters

Time Purge Start: 0840 hours

Time Sample Start: 0932 hours

Time Purged: 52 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 1000'
0915	21.5	7.47	1341	2.97	2.82	0.27	9.5	0.00	Clear, no odors
0918	21.5	7.50	1370	2.78	2.77	0.33	10.5	0.00	
0921	21.5	7.54	1394	2.58	2.23	0.33	11.5	0.00	
0924	21.5	7.57	1412	2.54	2.74		12.5	0.00	
0927	21.5	7.59	1414	2.32	2.63	↓	13.5	↓	
0930	21.5	7.60	1418	2.36	2.37	↓	14.5	↓	
									Low flow for VOCs
									2, 4, 6

Sample ID: MW-01-O Sample Time, 0932 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

pH and TEMP CALIBRATION RECORD

Florence Copper Project

Instrument: BC's YSI 556
SN: 15A102406
Probe SN: 600336

APP Sampling Event
Month: JAN
Year: 2018

Calibration Procedures:

-pH calibration/measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 4500 H pH.*** Gentle agitation or stirring of sample should maintained during pH calibration and sample analysis.

-Temperature measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 2550 Temperature*** using an NIST traceable thermometer.

Calibration Standards Used:

Standard	Manufacturer	Lot#	Received	Expiration
4.00	Env. Supply	6GLT77	1-3-18	Dec 18
7.00	~~7GH158~~	7GH158	1-3-18	Aug 19
10.00		7GF884	12-19-17	Jun 19
7.00 Chk	Env. Supply	7GG099	1-9-18	Jul 19

Calibration Record

Date	Time	Sampler	pH 4.00		pH 7.00		pH 10.00		pH 7.00Chk		Temp Chk*	Notes**
			T (°C)	Cal.	T (°C)	Cal.	T (°C)	Cal.	T (°C)	Cal.	T (°C)	
1-9-18	0920	M. Dorsett	14.0	4.00	14.5	7.00	14.7	10.02	15.4	7.02		
1-9-18	1222	"	—	—	—	—	—	—	~~23.8~~	6.99		Was 7.12
1-10-18	0800	"	12.3	4.00	13.4	7.00	14.1	10.00	13.0	6.99		
1-11-18	0925	"	15.7	4.00	13.4	7.00	14.5	10.01	14.6	6.98		
1-11-18	1230	"	—	—	—	—	—	—	18.3	7.02		
1-15-18	0840	"	18.6	4.00	18.0	7.00	16.7	10.02	19.2	7.02		
1-15-18	1120	"	—	—	—	—	—	—	17.7	7.02		
1-25-18	0840	"	19.6	4.00	21.7	7.01	18.5	10.02	17.8	7.02		
1-25-18	1250	"	—	—	—	—	—	—	~~26.8~~ 22.6		6.98	

* Temperature check performed with second NIST thermometer.
** If meter does not provide slope, ensure that the calibration is confirmed with a recheck of pH 7.0 in the column "pH 7.00Chk".
***Perform 7-Check every 10 measurements or if Temperature increases by 15 °F.
**** All maintenance to instrument during the field event should be logged on this form. All maintenance should also be logged on the "Preventative Maintenance" log.

EC and DO CALIBRATION RECORD

Florence Copper Project

Instrument: BC's YSI 556
SN: 15A102406
Probe SN: 602336

APP Sampling Event
Month: JAN
Year: 2018

Calibration Procedures:

-EC calibration/measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 2510 Conductivity.***

-Temperature measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 2550 Temperature*** using an NIST traceable thermometer.

-DO calibration/measurement should be performed as per manufacturer recommendations.

Calibration Standards Used:

Standard Conc.	Manufacturer	Lot#	Received	Expiration
1413	Env. Supply	76H324	12/22/17	Aug 18
(check)	N/A			

Calibration Record

Date	Time	Sampler	Specific Conductance						DO calibration performed?	Notes*
			EC 1413		EC 1413		EC 1413 Chk			
			T (°C)	Cal.	T (°C)	Cal.	T (°C)	Cal.	Yes/No	
01-9-18	0835	Orrett			1415	1414		N/A	Yes	100% SAT 763.2 mm/Hg
1-10-18	0820	"			12.5	1413			Yes	100% SAT 763.5 "
1-11-18	0837	"			15.8	1413			Yes	100% SAT. BP 770.3 "
1-15-18	0845	"			14.7	1413			Yes	100% SAT 762.7 "
1-25-18	0900	"			17.5	1414			Yes	100% SAT 766.5

* All maintenance to instrument during the field event should be logged on this form. All maintenance should also be logged on the "Preventative Maintenance" log.

TURBIDITY CALIBRATION RECORD

Florence Copper Project

Instrument: Hach La Motte 2020e
SN: 10969
Probe SN: N/A

APP Sampling Event
Month: JAN
Year: 2018

Calibration Procedures:

-Calibration/measurement should be performed in accordance with protocols set forth by ***USEPA Method 180.1***
using an NIST traceable thermometer.

Calibration Standards Used:

Standard	Manufacturer	Lot#	Received	Expiration
0 NTU	AMCO	C691307	2-13-17	5/18
1 NTU	"	C582178	5-1-17	1/18
10 NTU	"	C6898408	2-13-17	5/18
1 NTU Chk		C582179	5-1-17	1/18

Calibration Record

Date	Time	Sampler	0 NTU	1 NTU	10 NTU	1 NTU Chk	Notes**
1-9-18	0845	Draut	0.01	1.01	9.98	1.02	
1-10-18	0820	"	0.00	1.00	10.02	0.98	
1-11-18	0840	"	0.00	1.01	10.02	1.00	
1-15-18	0845	"	0.00	0.98	10.02	1.02	
1-25-18	0855	"	0.00	0.98	9.98	1.00	

YSI 556 NEW JAN 28, 2015

1/28/15

↓

3/26/15 No Maint. Required

5/4/2015 DO not Calibrating -
MiOrcutt Replaced DO Sensor membrane.
Recalibration OK. (Florence).

5/7/2015 NIST Thermometer check.
MiOrcutt BC-1A Model 4146 Exp 11/8/2015
1°C. from YSI 556 Temp.

8/10/2015
MiOrcutt pH not calibrating.
F.C. Forced readings -
Un calibrated and pH 7.0
Re Calib. check OK. MV +146
at pH 7.0

8/13/2015 Replaced pH/ORP Sensor
MiOrcutt +0.6 MV - good

Scale: 1 square = _____

2016

Aug 9, - Ernies
MiOrcutt D.O. Fluid Replace
and D.O. Tip replaced

Aug 26 Replaced DO Tip
w/ new fluid.
MiOrcutt Andrews property

Sept. 6 MiOrcutt near
YSI pH failure.
Replaced pH/ORP Sensor
Equipco - repair.

Nov 10, 2016 M. Orcutt
Florence
Replaced YSI 556 pH/ORP Sensor
Nov 11, 2016 NIST Thermometer
check @ Florence (W1585378)
18.4°C. YSI / 19.4° NIST (10C)

Scale: 1 square = _____

Rite in the Rain

OLD pH Sensor report

pH	mV	Reading	Temp
pH 7	·29	7.00	24.8 °C
4	+85.2	4.00	8524.4 ∝
10	-141.4	10.01	24.6

* pH 7 ok,
pH 4, 10 forced,
Changed Sensor (pH, ORP)

Scale: 1 square = _____

Scale: 1 square = _____

Brown and Caldwell
Michael Orcutt 6025674000
201 East Washington Street Suite 500
Phoenix AZ 85004

Account # 5490

USEPA Lab ID
Study # **QTA**
Study Type **External PT**

NPDES ID #
Open Date **10/30/2017**
Close Date **12/13/2017**

Part# **55026WV** Lot# **081117** **WP Conductance @ 25°C - DMRQA** **@ 25 C** Invoice# **166494** Units **umhos/cm**

NELAC #	Component	Method Code	Method Description	</>	Reported Value	AV or StudyMean	Assigned Value	Acceptance Limits Low	Acceptance Limits High	Performance Evaluation	Analysis Date
1610	Specific Conductance @ 25 C	200	2510B		768	744	744	670	818	ACCEPT.	12/12/2017

Samples were prepared and scored according to the principles outlined in the "The TNI Standard EL-V3-2009" and the current Fields of Proficiency Testing Tables, FoPTs.
All components are formulated and verified under Absolutes' NELAC scope (ANAB Accreditation ISO 17025, 17043 (Cert.# AP-1543) , Guide 34-35) as shown in blue font.

Calibration
Certificate No. 1750.01

Calibration complies with ISO/IEC 17025, ANSI/NCSL Z540-1, and 9001

Cert. No.: 4372-8485029

Traceable® Certificate of Calibration for Flip-Stick™ Thermometer

Instrument Identification:

Model: 4372 S/N: 170481521 Manufacturer: Control Company

Standards/Equipment:

Description	Serial Number	Due Date	NIST Traceable Reference
Temperature Calibration Bath TC-191	A42238		
Thermistor Module	A27129	12/01/17	1000401760
Temperature Probe	5202	12/19/17	B6B30058-1
Temperature Calibration Bath TC-218	A73332		
Thermistor Probe	5356	1/10/18	B7104024
Readout, Digital Thermometer	B5C344	3/12/18	B7314035

Certificate Information:

Technician: 104 Procedure: CAL-3 Cal Date: 4/24/17 Due Date: 4/24/19

Test Conditions: 23.7°C 47.0 %RH 1015 mBar

Calibration Data: (New Instrument)

Unit(s)	Nominal	As Found	In Tol	Nominal	As Left	In Tol	Min	Max	±U	TUR
°C		N.A.		0.000	-0.4	Y	-1.0	1.0	0.059	>4:1
°C		N.A.		90.000	89.9	Y	89.0	91.0	0.059	>4:1

This Instrument was calibrated using Instruments Traceable to National Institute of Standards and Technology.

A Test Uncertainty Ratio of at least 4:1 is maintained unless otherwise stated and is calculated using the expanded measurement uncertainty. Uncertainty evaluation includes the instrument under test and is calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor k=2 to approximate a 95% confidence level. In tolerance conditions are based on test results falling within specified limits with no reduction by the uncertainty of the measurement. The results contained herein relate only to the item calibrated. This certificate shall not be reproduced except in full, without written approval of Control Company.

Nominal=Standard's Reading; As Left=Instrument's Reading; In Tol=In Tolerance; Min/Max=Acceptance Range; ±U=Expanded Measurement Uncertainty; TUR=Test Uncertainty Ratio; Accuracy=±(Max-Min)/2; Min = As Left Nominal(Rounded) - Tolerance; Max = As Left Nominal(Rounded) + Tolerance; Date=MM/DD/YY

Nicol Rodriguez, Quality Manager

Aaron Judice, Technical Manager

Maintaining Accuracy:

In our opinion once calibrated your Flip-Stick™ Thermometer should maintain its accuracy. There is no exact way to determine how long calibration will be maintained. Flip-Stick™ Thermometers change little, if any at all, but can be affected by aging, temperature, shock, and contamination.

Recalibration:

For factory calibration and re-certification traceable to National Institute of Standards and Technology contact Control Company.

CONTROL COMPANY 12554 Galveston RD Suite B230 Webster TX USA 77598
Phone 281 482-1714 Fax 281 482-9448 service@control3.com www.control3.com

Control Company is an ISO 17025:2005 Calibration Laboratory Accredited by (A2LA) American Association for Laboratory Accreditation, Certificate No. 1750.01.
Control Company is ISO 9001:2008 Quality Certified by (DNV) Det Norske Veritas, Certificate No. CERT-01805-2006-AQ-HOU-RvA.
International Laboratory Accreditation Cooperation (ILAC) - Multilateral Recognition Arrangement (MRA).

BROWN AND CALDWELL

Acknowledgement Form

Name of Project/Site: Curis/ Florence Copper	**Project No:** 149505
Project/Site Location: Florence, Arizona	**Permit Type (APP, AZPDES):** APP
Employee Completing Form: (Print and Sign): Michael Orcutt	**Date:** 1/31/2017

Employee Acknowledgement:

The following signatures indicate that these personnel have read and/or been briefed on the documents indicated and understand the work to be performed:

- ☑ pH by SM 4500 H-B
- ☑ temperature by SM 2550B
- ☑ specific conductance by SM 2510 B
- ☑ dissolved oxygen by SM 4500 O-G
- ☑ turbidity by EPA 180.1
- ☐ Manufacturer Info for Instrument _____
- ☐ Manufacturer Info for Instrument _____

Print	Sign
M. Orcutt	

Comments

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # _____ DATE 1-9-2018 PAGE 1 OF 1

PROJECT NAME Florence Copper# _____
CONTACT NAME: Barb Sylvester
COMPANY NAME: Brown & Caldwell
ADDRESS: 2 N. Central # 1600
CITY Phoenix STATE AZ ZIP CODE 85004
PHONE 602-567-4000 FAX -4001
SAMPLER'S SIGNATURE _____

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	Energanics (1,3,4)	Cyanide (free)	Organics (1,3,4)	TPH/DRO	Diss. Metals (1,3,4)	Total Uranium	RAD Chem (1,3,4)	Radon 222
MS4-0	1-9-18	0900		GW	12	X	X	X	X	X	X	X	X
MS4-LBF	1-9-18	1012		GW	12	X	X	X	X	X	X	X	X
MS8-0	1-9-18	1250		GW	12	X	X	X	X	X	X	X	X
MS2-UBF	1-9-18	1407		GW	12	X	X	X	X	X	X	X	X
TB	1-9-18	—		DI	2			X					

1. RELINQUISHED BY:
Signature _____
Printed Name Michael Orcutt
Firm Brown + Caldwell
Date/Time 1-9-2018 @ 1500

2. RECEIVED BY:
Signature _____
Printed Name _____
Firm _____
Date/Time _____

TURNAROUND REQUIREMENTS:
X Standard (approx.10 days)*
___Next day ___2 Day ___5 Day*
___ Email Preliminary Results To:
_____
* Working Days

REPORT REQUIREMENTS:
___ I. Routine Report
X II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account ___ Y ___ N
P.O. # _____
Bill to: Florence Copper

SAMPLE RECEIPT:
Total Containers _____
Temperature _____
☐ Wet Ice ☐ Blue Ice

3. RELINQUISHED BY:
Signature _____
Printed Name _____
Firm _____
Date/Time _____

4. RECEIVED BY:
Signature _____
Printed Name TURNER LABORATORIES, INC.
Firm _____
Date/Time _____

*LEGEND
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis:	☐ Yes	☐ No	Custody Seals	☐	Preservation Confirmation	☐
ADEQ Forms:	☐ Yes	☐ No	Container Intact	☐	Appropriate Head Space	☐
Mail ADEQ Forms:	☐ Yes	☐ No	COC/Labels Agree	☐	Received Within Hold Time	☐

* 3 containers to Rad Safety by BC.
See Analysis sheet w/ COC, Diss. Metals field Filtered List.

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # _____ DATE 1-10-2018 PAGE 1 OF 1

PROJECT NAME Florence Copper # _____
CONTACT NAME: Barb Sylvester
COMPANY NAME: Brown and Caldwell
ADDRESS: 2 N. Central #1600
CITY Phoenix, STATE AZ ZIP CODE 85004
PHONE 602.567.4000 FAX -4001
SAMPLER'S SIGNATURE _____

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	Inorganics (List)	Cyanide (Free)	Organics (List)	TPH / DRO 8015	Diss. Metals (List)	Total Uranium	Rad Chem (List)	Radon 222
MS9-0	1-10-18	0837		GW	12	X	X	X	X	X	X	X	X
MS7-0	1-10-18	1342		GW	12	X	X	X	X	X	X	X	X
TB	1-10-18	—		DF	1			X					

1. RELINQUISHED BY: _____
Signature _____
Printed Name Michael Chatt
Firm Brown+Caldwell
Date/Time 1-10-2018 @ 1450

2. RECEIVED BY:
Signature _____
Printed Name _____
Firm _____
Date/Time _____

3. RELINQUISHED BY:
Signature _____
Printed Name _____
Firm _____
Date/Time _____

4. RECEIVED BY:
Signature _____
Printed Name TURNER LABORATORIES, INC.
Firm _____
Date/Time _____

TURNAROUND REQUIREMENTS:
X Standard (approx.10 days)*
___Next day ___2 Day ___5 Day*
___ Email Preliminary Results To:
_____
* Working Days

REPORT REQUIREMENTS:
___ I. Routine Report
X II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
___ III. Date Validation Report (includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account X Y ___ N
P.O. # _____
Bill to: Florence Copper Direct

SAMPLE RECEIPT:
_____
Total Containers _____
_____
Temperature _____
_____
☐ Wet Ice ☐ Blue Ice

***LEGEND**
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis:	☐ Yes ☐ No	Custody Seals	☐	Preservation Confirmation	☐
ADEQ Forms:	☐ Yes ☐ No	Container Intact	☐	Appropriate Head Space	☐
Mail ADEQ Forms:	☐ Yes ☐ No	COC/Labels Agree	☐	Received Within Hold Time	☐

* Diss Metals to be Field Filtered
* See Analysis List on COC *
@ Rad Chem/Radon to Rad Safety by BG (3)

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # _____ DATE 1-11-2018 PAGE 1 OF 1

PROJECT NAME Florence Copper # _____
CONTACT NAME: Barb Sylvester
COMPANY NAME: Brown + Caldwell
ADDRESS: 2 N. Central #1600
CITY Phoenix STATE Az ZIP CODE 85004
PHONE 602 567.4008 FAX -4001
SAMPLER'S SIGNATURE [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	Inorganic (1 SF)	Cyanide (Free)	Organics (1 SF)	TPH/DRO 8015	Diss. Metals (1 SF)	Total Uranium	RadioChem (1 SF)	Radon 222
MW-01-0	1-11-18	0920		GW	12	X	X	X	X	X	X	X	X
MW-01-LBF	1-11-18	1100		GW	12	X	X	X	X	X	X	X	X
MW-03-0	1-11-18	1310		GW	12	X	X	X	X	X	X	X	X
MW-01-LBR	1-11-18	1255		GW	12	X	X	X	X	X	X	X	X
TB	1-11-18			DI	2			X					

1. RELINQUISHED BY: [signature]
Signature
Printed Name: Michael Orcutt
Firm: Brown + Caldwell
Date/Time: 1-11-2018 @ 1350

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Printed Name
Firm: TURNER LABORATORIES, INC.
Date/Time

TURNAROUND REQUIREMENTS:
X Standard (approx. 10 days)*
___ Next day ___ 2 Day ___ 5 Day*
___ Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
___ I. Routine Report
X II. Report (Includes DUP, MS, MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data)
Add 10% to Invoice

INVOICE INFORMATION:
Account X Y ___ N
P.O. # _____
Bill to: Florence Copper Direct

SAMPLE RECEIPT:
Total Containers _____
Temperature _____
☐ Wet Ice ☐ Blue Ice

***LEGEND**
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis:	☐ Yes ☐ No	Custody Seals	☐	Preservation Confirmation	☐
ADEQ Forms:	☐ Yes ☐ No	Container Intact	☐	Appropriate Head Space	☐
Mail ADEQ Forms:	☐ Yes ☐ No	COC/Labels Agree	☐	Received Within Hold Time	☐

*See Analytical 1 SF w/ COC
* Diss. Metals field Filtered
@ Radio Chem / Radon 222 to Rad Safety by BC 1/11/18
- 3 Bottles

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # _____ DATE 1-15-2018 PAGE 1 OF 1

PROJECT NAME Florence Copper# _____
CONTACT NAME: Barb Sylvester
COMPANY NAME: Brown and Caldwell
ADDRESS: 2 N. Central # 1600
CITY Phoenix STATE Az ZIP CODE 85004
PHONE 602 567.4000 FAX -4001
SAMPLER'S SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	Inorganic (137)	Cyanide (Free)	Organics (137)	TPH/DRO 8015	Diss. Metals (137)	Total Uranium (137)	Radio Chem	Radon 222
M60-0	1-15-18	0918		GW	12	X	X	X	X	X	X	X	X
MS6-LBF	1-15-18	1028		GW	12	X	X	X	X	X	X	X	X
M55-LBF	1-15-18	1145		GW	12	X	X	X	X	X	X	X	X
TB	1-15-18	—		DW	2			X					

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

1. RELINQUISHED BY:
Signature
Printed Name: Michael Quinn
Firm: Brown + Caldwell
Date/Time: 1-15-2018 @ 1300

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Printed Name: TURNER LABORATORIES, INC.
Firm
Date/Time

TURNAROUND REQUIREMENTS:
X Standard (approx.10 days)*
___Next day ___2 Day ___5 Day*
___Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
___ I. Routine Report
X II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data)
Add 10% to Invoice

INVOICE INFORMATION:
Account X Y ___ N
P.O. # _____
Bill to: Florence Copper Directly

SAMPLE RECEIPT:
Total Containers _____
Temperature _____
☐ Wet Ice ☐ Blue Ice

***LEGEND**
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis:	☐ Yes ☐ No	Custody Seals	☐	Preservation Confirmation	☐
ADEQ Forms:	☐ Yes ☐ No	Container Intact	☐	Appropriate Head Space	☐
Mail ADEQ Forms:	☐ Yes ☐ No	COC/Labels Agree	☐	Received Within Hold Time	☐

Diss. Metals field filtered.
See Analytical list at COC
* Rad Chem/Radon 222 to Rad Safety by BC. 1-15-18

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # _____ DATE 1-25-2018 PAGE 1 OF 1

PROJECT NAME Florence Copper#
CONTACT NAME: Barb Sylvester
COMPANY NAME: Brown and Caldwell
ADDRESS: 2 North Central #1600
CITY Phoenix STATE AZ ZIP CODE 85004
PHONE 602.567.4000 FAX -4001
SAMPLER'S SIGNATURE

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	Inorganics (List)	Cyanide (Free)	Organics (List)	TPH DRO 8015	Diss. Metals (List)	Total Uranium	Rad Chem (List)	Radon 222
MW-01-0	1-25-18	0932		GW	12	X	X	X	X	X	X	X	X
MW-01-LBF		1112		GW	12	X	X	X	X	X	X	X	X
MG1-LBF		1310		GW	12	X	X	X	X	X	X	X	X
TB		—		DI	3			X					

1. RELINQUISHED BY:
Signature
Printed Name Michael Orcutt
Firm Brown+Caldwell
Date/Time 1-25-2018 @ 1400

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
X Standard (approx.10 days)*
___Next day ___2 Day ___5 Day*
___Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
___ I. Routine Report
X II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account ___ Y ___ N
P.O. #
Bill to: Florence Copper Direct Billing

SAMPLE RECEIPT:
Total Containers
Temperature
☐ Wet Ice ☐ Blue Ice

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Printed Name TURNER LABORATORIES, INC.
Firm
Date/Time

*LEGEND
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis:	☐ Yes ☐ No	Custody Seals	☐	Preservation Confirmation	☐
ADEQ Forms:	☐ Yes ☐ No	Container Intact	☐	Appropriate Head Space	☐
Mail ADEQ Forms:	☐ Yes ☐ No	COC/Labels Agree	☐	Received Within Hold Time	☐

Radon 222 Rad Chem to Rad Safety by BC (-3 bottles)
Diss. Metals field filtered
See Analytical List w/ COC.